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ABSTRACT

This profile is designed as a recording sheet for monitoring an individual student's progress throughout the school year. Fourth grade assessment materials and the "Strategies for Instruction in Mathematics" suggest tasks and questions that can be used for on-going and summative assessment. Directions for use and descriptions of levels of performance are presented. (ASK)

# Mathematics Fourth Grade Observation Profile for On-Going Assessment and End of the Year Evaluation

This profile is designed as a recording sheet for monitoring an individual student's progress throughout the school year. The *Strategies for Instruction in Mathematics* suggests tasks and questions that can be used for on-going and summative assessment.

## Directions for use:

The four main mathematical goals and the specific objectives from the North Carolina *Standard Course of Study* are clustered on this profile according to "big ideas." There are six boxes for recording a student's performance level (1, 2, 3, or 4) at each grading period as some school systems have six grading periods, while others have four grading periods. Teachers will use only the boxes needed. The hexagon beside each "big idea" is for the teacher's summative evaluation and will be filled in at the end of the year.

It is suggested that teachers record an evaluation (performance level) for each objective that is taught during a particular grading period; it is not necessary to record an evaluation for objectives that have not been addressed. Student work, conversations with the student, and observations provide evidence for the evaluation of performance. Evaluations are based on the student's abilities to explain, model, and apply learning. Student work folders (or portfolios) will support the evaluation.

Public Schools of North Carolina
State Board of Education
Department of Public Instruction

Student Name _____ ID # _____ Teacher's Name _____ School _____ Year _____

# Fourth Grade Observation Profile for On-Going Assessment and End of the Year Evaluation

**Number Sense, Numeration, and Numerical Operations - Spatial Sense, Measurement, and Geometry - Patterns, Relationships, and Functions - Data, Probability, and Statistics**

NAME _____

## Descriptions of levels of Performance

Level IV (Exceeds expectations)
- consistent performance beyond grade level
- works independently
- understands advanced concepts
- applies strategies creatively
- analyzes and synthesizes
- shows confidence and initiative
- justifies and elaborates responses
- makes critical judgements
- makes applications and extensions beyond grade level; applies Level III competencies in more challenging situations

**Level III (Proficient)**
- **exhibits consistent performance**
- **shows conceptual understanding**
- **applies strategies in most situations**
- **responds with appropriate answer or procedure**
- **completes tasks accurately**
- **needs minimal assistance**
- **exhibits fluency and applies learning**
- **shows some flexibility in thinking**
- **works with confidence**
- **recognizes cause and effect relationships**
- **applies, models, and explains concepts**

Level II (Not yet proficient)
- exhibits inconsistent performance and misunderstandings at times
- shows some evidence of conceptual understanding
- has difficulty applying strategies or completing tasks in unfamiliar situations
- responds with appropriate answer or procedure sometimes
- requires teacher guidance frequently
- needs additional time, opportunities
- demonstrates some Level III competencies but is inconsistent

Level I (Limited performance)
- exhibits minimal performance
- shows very limited evidence of conceptual understanding and use of strategies
- responds with inappropriate answer and/or procedure frequently
- very often displays misunderstandings
- completes task appropriately and accurately infrequently
- needs assistance, guidance and modified instruction

## Using numbers

1.01 Read and write numbers less than one million using standard and expanded notation.

1.03 Model and identify the place value of each digit in a multi-digit numeral to the hundredths place.

1.04 Model, identify, and compare rational numbers (fractions and mixed numbers).

1.05 Identify and compare rational numbers in decimal form (tenths and hundredths) using models and pictures.

1.06 Relate decimals and fractions (tenths and hundredths) to each other using models and pictures.

1.10 Model and explain associative and distributive properties.

1.13 Round rational numbers to the nearest whole number and justify.

## Computing

1.07 Use models and pictures to add and subtract decimals, explaining the processes and recording results.

1.08 Use models and pictures to add and subtract rational numbers with like denominators.

1.09 Find the fractional part of a whole number using models and pictures.

1.11 Memorize the division facts related to the multiplication facts/tables through 10.

1.12 Identify missing factors in multiplication facts.

1.15 Multiply 2- or 3- digit numbers by 1-digit numbers or a 2-digit multiple of 10.

1.16 Divide using single-digit divisors, with and without remainders.

1.17 Use order of operations with addition, subtraction, multiplication, and division

## Solving problems

1.02 Use estimation techniques in determining solutions to problems.

1.14 Estimate solutions to problems.

1.18 Solve multi-step problems; determine if there is sufficient data given, then select additional strategies including:
- make a chart or graph
- look for patterns
- make a simpler problem
- use logic
- work backwards
- break into parts.

Verify and interpret results with respect to the original problem; use calculators as appropriate. Discuss alternate methods for solution.

2.08 Write and solve meaningful, multi-step problems involving money, elapsed time, and temperature; verify reasonableness of answers.

## Applying geometric ideas

2.01 Identify points, lines, and angles (acute, right, and obtuse); identify in the environment.

2.02 Use manipulatives, pictorial representations, and appropriate vocabulary (e.g. sides, angles, and vertices) to identify properties of plane figures; identify in the environment.

2.03 Use manipulatives, pictorial representations, and appropriate vocabulary (e.g. faces, edges, and vertices) to identify properties of polyhedra (solid figures); identify in the environment.

2.04 Identify intersecting, parallel, and perpendicular lines and line segments and their midpoints; identify in the environment.

2.05 Recognize congruent plane figures after geometric transformations such as rotations (turns), reflections (flips), and translations (slides).

2.06 Use designs, models, and computer graphics to illustrate reflections, rotations, and translations of plane figures and record observations.

## Using measurement concepts

2.07 Estimate and measure length, capacity and mass using these additional units: inches, miles, centimeters, and kilometers; milliliters, cups, and pints; kilograms and tons.

2.09 Use models to develop the relationship between the total number of square units contained in a rectangle and the length and width of the figure.

2.10 Measure the perimeter of rectangles and triangles. Determine the area of rectangles and squares using grids; find areas of other regular and irregular figures using grids.

## Using patterns/relationships

3.01 Identify numerical and geometric patterns by stating their rules; extend the pattern, generalize, and make predictions.

3.02 Identify the pattern by stating the rule, extend the pattern, generalize the rule for the pattern, and make predictions when given a table of number pairs or a set of data.

3.03 Construct and order a table of values to solve problems associated with a given relationship.

3.04 Use non-numeric symbols to represent quantities in expressions, open sentences, and descriptions of relationships. Determine solutions to open sentences.

## Using data/probability

4.01 Interpret and construct stem-and-leaf plots.

4.02 Display data in a variety of ways including circle graphs. Discuss the advantages and disadvantages of each form including ease of creation and purpose of the graph.

4.03 Collect, organize, and display data from surveys, research, and classroom experiments, including data collected over time. Include data from other disciplines such as science, physical education, social studies, and the media.

4.04 Interpret information orally and in writing from charts, tables, tallies, and graphs.

4.05 Use range, median, and mode to describe a set of data.

4.06 Plot points that represent ordered pairs of data from many different sources such as economics, science experiments, and recreational activities.

4.07 Investigate and discuss probabilities by experimenting with devices that generate random outcomes such as coins, number cubes, spinners.

4.08 Use a fraction to describe the probability of an event and report the outcome of an experiment.

## Comments:

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